

1 December 2008

**WAIVER REQUEST AND
WILDLIFE HABITAT ANALYSIS
UNDER THE TOWN OF NEEDHAM'S
WETLANDS PROTECTION BYLAW AND REGULATIONS
CAROL ROAD AT BREWSTER DRIVE
NEEDHAM, MA**

1.0 Introduction

The applicant, Volante Farms, is requesting a waiver under the Town of Needham's General Wetlands Protection Bylaw and Regulations for proposed activities included in the Notice of Intent for the property located at the intersection of Carol Road and Brewster Drive in Needham, MA. The application includes work within the 50 to 25 foot buffer zone which, because of the distance, fails to meet the Wildlife Habitat Performance Standards - Buffer Zone of the Town of Needham's Wetland Policy, and section 2.06(3)(b) of the Town of Needham's Wetlands Protection Regulations. The applicant is seeking relief from these performance standards with the submittal of a Wildlife Habitat Analysis for the Notice of Intent.

Note that the regulations clearly state that "The plant communities and soils of these areas, where they are composed of natural vegetation and indigenous soils" . . . have some higher implied higher values for wildlife habitat. In this case, we are dealing with filled soils and many dominant non-native plant species in the 50 to 25 foot buffer zone, which should be exempt from special protection under the Needham Wetland Bylaw.

The Abbreviated Notice of Resource Area Delineation (ANRAD) was accepted by the Needham Conservation Commission in the fall of 2007. This ANRAD delineated the limit of bordering vegetated wetland (BVW) on site.

On 9 and 10 October 2008, staff of the Carr Research Laboratory, Inc. inspected the site and performed a detailed Wildlife Habitat Evaluation according to the criteria listed in the Needham Wetlands Protection Regulations and using the *Mass. DEP Wildlife Habitation Protection Guidance for Inland Wetlands Evaluation Forms*. For each proposed disturbance within the 50 to 25 foot buffer zone, both the adjacent wetland resource area and upland buffer zone were documented using the *Appendix B: Detailed Wildlife Habitat Evaluation Forms*. These forms include all the necessary information required by the Needham Wetland Policy and Wetland's Protection Regulations for Wildlife Habitat Evaluations to make a determination if the soils and vegetation beyond 25 feet require special protection.

2.0 Description of Areas of Impact

There are three areas where the project as designed will cause a disturbance in the 50 to 25 foot upland buffer zone. The first disturbance to the buffer zone occurs in Lot 1 above wetland flags CRL-29 and CRL-30. In this area, a small section of the proposed driveway impacts the buffer zone. The second area of disturbance is also on Lot 1 and it occurs above wetland flags CRL-48 and CRL-49. In this area the corner of a proposed house

occurs within the 50 to 25 foot buffer zone. The third area of disturbance is located on Lot 2 above wetland flags CRL- 71 to CRL-73. This is another area where a portion of a proposed house and its associated grading occur within the 50 to 25 foot buffer zone.

For each area of proposed disturbance, both the adjacent wetland resource area and the upland buffer zone were evaluated using *Appendix B: Detailed Wildlife Habitat Evaluation Forms*. These forms have all the documentation of the areas including information on size, hydrology, vegetation, and wildlife habitat features.

In addition to these forms, detailed plant lists have been created for each area. These lists include all plant species observed and the food index value (FIV) of each plant, and whether or not the plant possesses any winter food value (WV). The *Appendix B: Detailed Wildlife Habitat Evaluation Forms* and these plant lists are included with this report.

2.0 Present Conditions in Buffer Zone Areas

Disturbance Area 1: 50 to 25 Foot Buffer Zone above CRL-29 and CRL-30

The disturbance in this area is a proposed driveway associated with the proposed single family home on Lot 1. This proposed driveway disturbs approximately 298 square feet of 50 to 25 foot buffer zone. This represents a relatively small percentage of the 50 to 25 foot buffer zone in that area and in the entire site. This area of disturbance is only 1.6% of the 50 to 25 foot buffer zone located on Lot 1 of the proposed project and only 1.4% of the 50 to 25 foot buffer zone on the entire project site.

The area provides only one Important Habitat Features according to the *Wildlife Habitat Protection Guidance, Appendix B: Detailed Wildlife Habitat Evaluation Forms*. This is "large woody debris on ground" which is one rotting fallen log. However, the area is dominated by several invasive and non-native plant species which include European buckthorn, multiflora rose, oriental bittersweet, privet hedge and garlic mustard. The area also has significant signs of human dumping with pieces of trash emerging from the filled area. Photos of this area and the adjacent wetland can be seen in Photos 1 & 2.

Disturbance Area 2: 50 to 25 Foot Buffer Zone above CRL-48 and CRL-49

The second area of disturbance is an area where a portion of a single family home is proposed for Lot 1. This area of disturbance is again relatively small in size disturbing 403 square feet of 50 to 25 foot buffer zone. This represents 2.3% of the 50 to 25 foot buffer zone for Lot 1 and 1.9% for the total 50 to 25 foot buffer zone on site.

The area provides a few Important Habitat Features which include the "important upland food plants", in this case the fox grape and the "one standing dead tree with a 6-12" dbh and it's associated "tree cavity" which was six inches in diameter. It should be noted that the cavity was only a few inches above the ground. No signs of animals using this cavity were observed. Again this area has several dominant invasive and non-native plant species. These include Norway spruce, multiflora rose, oriental bittersweet, and garlic mustard. In addition, the area also showed significant signs of dumping. Trash and fill were present in the area in significant amounts. Photos 3 and 4 show the upland and the nearby wetland.

Disturbance Area 3: 50 to 25 Foot Buffer Zone above CRL-71 to CRL-73

The third area of disturbance occurs in the 50 to 25 foot buffer zone above wetland flags CRL-71 to CRI-73. This is the largest area of disturbance that is proposed. In total, the disturbance of 50 to 25 foot buffer zone for the construction of a single family home will be 2,092 square feet. This is 54% of the 50 to 25 foot buffer zone located on Lot 2. While this is a large percentage of the buffer zone on Lot 2, the lot is much smaller than Lot 1

and has much less of the 50 to 25 foot buffer zone present. The area still only represents 9.7% of the total 25-50' buffer zone present on the entire site. This upland area is dominated by European buckthorn, non-native crab apple, multiflora rose, and oriental bittersweet in the shrub layer. In addition, garlic mustard was also dominant in some locations in the 50 to 25 foot buffer zone.

The wetland area offers two Important Wildlife Habitat Features; "dense herbaceous cover" and "large woody debris on ground." The dense cover comes from the large amount of sensitive fern in the area, but note that (1) it already has less dense coverage of the ground layer due to cooler weather triggering plant die back and (2) this fern has a Wildlife Food Index Value of zero. The large woody debris consisted of two rotting fallen logs. Once again there is significant invasion of non-native plant species. European buckthorn and multiflora rose are again dominant in the area, and Oriental bittersweet, garlic mustard and bittersweet nightshade are also just below the wetland line. There is also trash evident in the area, but not in as great amounts as in the previous two areas. However, the soils in the wetland are dredged from the man-made pond which is 65 feet on average from the wetland border. When the pond was excavated, the soil was placed upgradient. Therefore, much of the buffer zone is actually filled with the excavated soils from the pond construction. Photos of this area and the adjacent wetland area can be seen in Photos 5 & 6.

3.0 Description of Impacts

After reviewing the three areas of proposed alteration in the 50 to 25 foot buffer zone, the proposed work taking place 50 to 25 feet from the wetlands not cause a significant decrease in the buffer zone's function as an important resource area because of the past history of site use, the non-indigenous soils, and the dominance of the non-native trees, shrubs and herbs. The three areas make up a relatively small percentage (12.9%) of the total 50 to 25 foot buffer zone on site. This disturbance will not drastically alter the conditions in the buffer zone or its functions of providing significant wildlife habitat and protection to adjacent bordering vegetated wetlands.

All of the areas to be disturbed have vegetational communities dominated by non-native and invasive plant species. In addition, all of the areas have trash and evidence of human disturbance and dumping. These two facts greatly lower any wildlife habitat value the area can serve. This combined with the fact that according to the *Wildlife Habitat Protection Guidance, Appendix B: Detailed Wildlife Habitat Evaluation Forms* there are only a very small number of Important Wildlife Habitat Features present in any of the areas, leads us to conclude that none of the three areas offer any significant Wildlife Habitat.

The project has been designed to be as far removed from any BVW as practical and has tried to maintain as much buffer zone as possible. The project as designed proposes no alteration to any BVW nor to any 0-25' buffer zone. Note that denial of the driveway at the standard design of 12 feet wide cannot be moved entirely outside the 50 foot buffer zone, and thus denial of the driveway could constitute a "taking" of the land by the Town of Needham.

4.0 Measures of Mitigation

If the Commission deems necessary measures of mitigation, these could be included for the proposed project. Possible options include (1) removal of invasive species and their long term control in the 50 to 25 foot buffer zone (2) planting native tree and shrub species possessing high food values, and (3) trash removal in the 50 to 25 foot buffer zone. Any of these would help to increase the wildlife habitat value of the buffer zone. In addition, any large woody debris on the ground, such as fallen trees, which do pose significant wildlife habitat features, could be moved from the areas of alteration to other areas of the buffer zone prior to the commencement of construction. This would ensure that no Important Wildlife Habitat Features are destroyed or damaged with the proposed project.

5.0 Summary and Conclusions

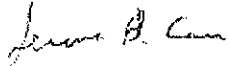
In conclusion, it is our professional opinion that this Waiver Request be granted because the buffer zone to be impacted does not serve as any significant wildlife habitat or other wetland value. The vegetational community is non-natural and made up of many invasive plant species, and the soils in many locations are disturbed and show signs of human dumping. We believe that this Wildlife Habitat Assessment demonstrates that the resource area of the 50 to 25 foot buffer zone in this case "does not protect the public interests" stated in the Needham Wetland Protection Bylaw.

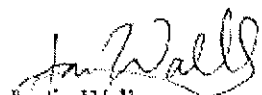
In addition, "strict compliance would cause an economic hardship greater in magnitude than the public interests served." The project as designed has tried to maintain as much 50 to 25 foot buffer zone as possible. The design has tried to minimize any disturbance to the greatest extent practicable. Disturbance Area 1 is the proposed driveway of minimum allowed width, and its location could not be changed to provide a lesser disturbance to the buffer zone. Disturbance Areas 2 & 3 could perhaps have the house footprints moved to provide a lesser disturbance. However, Lot 2 does not have much more area to work with and considering Zoning Bylaws and regulations moving the house may not be feasible. There are no drastically different alternative options that are available. By denying the project entirely an economic hardship would fall on the land owner.

Furthermore, the mitigation measures in the section above would serve the public interests by improving the buffer zone on site. By removing the non-native and invasive plant species and replacing them with high value native plantings would greatly enhance the wildlife habitat potential of the buffer zone. The trash removal would also be a substantial improvement over existing conditions. Furthermore, by removing wildlife habitat features, such as large fallen logs, and placing those features in other areas of the buffer zone, any loss of those features through the proposed disturbances would be avoided.

Given the non-native, invasive plant community and dumped and filled soils, we think that denying the project would not serve a substantial public interest and would also serve as an economic hardship for the landowner. It is our opinion that the Waiver Request should therefore be granted by the Commission. A far larger public service would be accomplished in improving the quality of the buffer zone on site through the mitigation measures of invasive species removal and control and native species plantings with high food values. If there are any questions about this Wildlife Habitat Evaluation, please do not hesitate to contact us.

Carr Research Laboratory, Inc.

by 
Jerome B. Carr, Ph.D.
Telmatologist (Wetland Scientist) &
Certified in Habitat Evaluation Procedures


Janjie Walker
Environmental Biologist

U.S. FISH AND WILDLIFE SERVICE



This is to certify that 2206 GAN
has successfully completed the requirements of the
course in

HABITAT EVALUATION PROCEDURES

Given at PRISTON, NEW HAMPSHIRE

May 22 1994


R. L. Johnson
Inspector

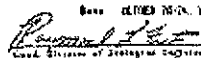

R. L. Johnson
Chief, Division of Biological Services

Table 1. Plant Identification - Flags CRL 29 and 30.

**Upland Plant Community Between
25 Foot Zone and 50 Foot Zone**

Tree Layer = red maple (*Acer rubrum*) (24)
 Norway maple (*Acer platanoides*) (24) (I)
 white ash (*Fraxinus Americana*) (10)
 crab apple (*Malus ioensis*) (23)

Shrub Layer = European buckthorn (*Rhamnus frangula*)(3)
 (I) (D)
 crab apple (*Malus ioensis*) (11) (D)

 multiflora rose (*Rosa multiflora*) (3*) (I) (D)
 Norway maple (*Acer platanoides*) (16) (I)

 white ash (*Fraxinus Americana*) (2)
 Tartarian honeysuckle (*Lonicera tatarica*) (4) (I)
 privet hedge (*Ligustrum sp.*) (T) (D) (I)
 nanny-berry (*Viburnum lentago*)
 American red raspberry (*Rubus idaeus*) (42*)
 oriental bittersweet (*Celastrus orbiculata*) (0)
 (I) (D)
 American bittersweet (*Celastrus scandens*) (0)

Herb Layer = spinulose woodfern (*Dryopteris spinulosa*) (0)
 wild onion (*Allium canadense*) (0)
 yellow wood sorrel (*Oxalis europaea*) (2)
 kidney-leaf white violet (*Viola renifolia*)(1) D)
 non-sphagnum moss (*Bryopsida sp.*) (0)
 garlic mustard (*Alliaria petiolata*) (0) (I)

Wetland Plant Community

red maple (*Acer rubrum*) (24) (D)

European buckthorn(*Rhamnus frangula*) (3) (I) (D)
 highbush blueberry (*Vaccinium corymbosum*) (34)
 (D)
 poison ivy (*Toxicodendron radicans*) (18*)
 privet hedge (on wetland edge) (*Ligustrum sp.*) (T)
 (I)

celandine (*Chelidonium majus*) (0)
 hydrophilic grass (*Gramineae sp.*) (1)
 kidney-leaf white violet (*Viola renifolia*) (1) (D)

NOTE: Following each plant species common name is the scientific name and Wildlife Food Index Value (FIV). FIVs are calculated and taken from *Martin, A.C., et al, American Wildlife & Plants - A Guide to Wildlife Food Habits, Dover Publications, Inc. New York, 1951* and *DeGraff, M. D., Trees Shrubs and Vines for Attracting Birds, Second Edition, Revised, University Press of New England, Lebanon, NH, 2002*. An asterisk (*) following a FIV indicates winter food value. An (I) following a plant name indicates the plant is an invasive or non-native species. A (D) following a plant name indicates the species was dominant in the respective layer.

Table 2. Plant Identification - Flags CRL 48 and 49.

Upland Plant Community Between
25 Foot Zone and 50 Foot Zone

Tree Layer = red maple (*Acer rubrum*) (24)
Norway spruce (*Picea abies*) (20) (I) (D)
crab apple (*Malus ioensis*) (23) (I)

Shrub Layer = European buckthorn (*Rhamnus frangula*)(3)(I)
crab apple (*Malus ioensis*) (11) (I) (D)
multiflora rose (*Rosa multiflora*) (3*) (I) (D)
American bittersweet (*Celastrus scandens*) (0)
oriental bittersweet (*Celastrus orbiculata*)
(0) (I) (D)
poison ivy (*Toxicodendron radicans*) (18*)
fox grape (*Vitis labrusca*) (41)
American red raspberry (*Rubus idaeus*) (42*)
black birch (*Betula lenta*) (7)

Herb Layer = bristly dewberry (*Rubus hispida*) (33) (D)
wild onion (*Allium canadense*) (0)
bittersweet nightshade (*Solanum dulcamara*) (1) (I)
garlic mustard (*Alliaria petiolata*) (0) (I)
sensitive fern (*Onoclea sensibilis*) (0)
upland grass (*Gramineae sp.*)
Virginia creeper (*Parthenocissus*
quinquefolia) (10)
non-sphagnum moss (*Bryopsida sp.*) (0)
white avens (*Geum canadense*) (0)
kidney-leaf white violet (*Viola renifolia*)(1)
henbit (*Lamium amplexicaule*) (0)

Wetland Plant Community

red maple (*Acer rubrum*) (24) (D)
yellow birch (*Betula alleghaniensis*)
(24) (D)

European buckthorn (*Rhamnus frangula*)(3)(I)
common buckthorn (*Rhamnus cathartica*) (3)
poison ivy (*Toxicodendron radicans*) (18*)
highbush blueberry (*Vaccinium*
corymbosum) (34)

multiflora rose (*Rosa multiflora*) (3*) (I)
(D)
fox grape (*Vitis labrusca*) (41)
swamp azalea (*Rhododendron viscosum*) (0)

Interrupted fern (*Osmunda claytoniana*) (0)
hydrophilic grass (*Gramineae sp.*)
kidney-leaf white violet (*Viola renifolia*)(1)
jewelweed (*Impatiens capensis*) (2)
skunk cabbage (*Symplocarpus foetidus*) (1)
late goldenrod (*Solidago gigantea*) (2)

non-sphagnum moss (*Bryopsida sp.*) (0)
white avens (*Geum canadense*) (0)
spinulose woodfern (*Dryopteris spinulosa*) (0)
Canada goldenrod (*Solidago Canadensis*) (2)
garlic mustard (*Alliaria petiolata*) (0) (I)

NOTE: Following each plant species common name is the scientific name and Wildlife Food Index Value (FIV). FIVs are calculated and taken from Martin, A. C., et al, *American Wildlife & Plants - A Guide to Wildlife Food Habits*, Dover Publications, Inc. New York, 1951 and DeGraff, M. D., *Trees Shrubs and Vines for Attracting Birds*, Second Edition, Revised, University Press of New England, Lebanon, NH, 2002. An asterisk (*) following a FIV indicates winter food value. An (I) following a plant name indicates the plant is an invasive or non-native species. A (D) following a plant name indicates the species was dominant in the respective layer.

Table 3. Plant Identification - Flags CRL -71 through 73.

Upland Plant Community Between
25 Foot Zone and 50 Foot Zone

Tree Layer = red maple (*Acer rubrum*) (24) (D)
quaking aspen (*Populus tremula*) (12*)

Shrub Layer = European buckthorn (*Rhamnus frangula*)(3)(I)
(D)
crab apple (*Malus ioensis*) (11)
multiflora rose (*Rosa multiflora*) (3*) (I) (D)
white ash (*Fraxinus Americana*) (2)
oriental bittersweet (*Celastrus orbiculata*) (0) (I)
poison ivy (*Toxicodendron radicans*) (18*)
American red raspberry (*Rubus idaeus*) (42*)

American hazelnut (*Corylus Americana*) (12)
white pine (*Pinus strobus*) (5*)
northern catalpa (*Catalpa speciosa*) (0)
common buckthorn (*Rhamnus cathartica*) (3)
American bittersweet (*Celastrus scandens*) (0)

Herb Layer = celandine (*Chelidonium majus*) (0)
Virginia Creeper (*Parthenocissus quinquefolia*) (10)
bittersweet nightshade (*Solanum dulcamara*) (1)
royal fern (*Osmunda regalis*) (0)
sensitive fern (*Onoclea sensibilis*) (0) (D)
Solomon's seal (*Polygonatum sp.*) (0)
wild onion (*Allium canadense*) (0)
upland grass (*Gramineae sp.*)
garlic mustard (*Alliaria petiolata*) (0) (I)

yellow wood sorrel (*Oxalis europaea*) (2)
Joe-Pye-weed (*Eupatorium dubium*) (T)
enchanter's nightshade (*Circaea quadrisulcata*) (1)
common milkweed (*Asclepias syriaca*) (0)

Canada goldenrod (*Solidago Canadensis*) (2)
white avens (*Geum canadense*) (0)
bittersweet nightshade (*Solanum dulcamara*) (1) (I)
common dodder (*Cuscuta gronovii*) (0)
late goldenrod (*Solidago gigantea*) (2)
Christmas fern (*Polystichum acrostichoides*) (0)
spinulose woodfern (*Dryopteris spinulosa*) (0)

Wetland Plant Community

red maple (*Acer rubrum*) (24)(D)

European buckthorn (*Rhamnus frangula*)(3) (I) (D)
arrowwood (*Viburnum recognitum*) (40)
poison ivy (*Toxicodendron radicans*) (18*)
silky dogwood (*Cornus amomum*) (48*)

multiflora rose (*Rosa multiflora*) (3*) (I)
American red raspberry (*Rubus idaeus*) (42*)
oriental bittersweet (*Celastrus orbiculata*) (0) (I) (D)
fox grape (*Vitis labrusca*) (41)

sensitive fern (*Onoclea sensibilis*) (0) (D)

garlic mustard (*Alliaria petiolata*) (0)

yellow wood sorrel (*Oxalis europaea*) (2)
jewelweed (*Impatiens capensis*) (2)
Canada goldenrod (*Solidago Canadensis*) (2)
common mugwort (*Artemisia vulgaris*) (0)
white avens (*Geum canadense*) (0)
common milkweed (*Asclepias syriaca*) (0)
Pennsylvania smartweed (*Polygonum pensylvanicum*) (59)
common dodder (*Cuscuta gronovii*) (0)
hydrophilic grass (*Gramineae sp.*) (1)

Joe-Pye weed (*Eupatorium dubium*) (T)
Virginia creeper (*Parthenocissus quinquefolia*) (10)
spinulose woodfern (*Dryopteris spinulosa*) (0)
northern willow herb (*Epilobium ciliatum*) (0)

late goldenrod (*Solidago gigantea*) (2)

NOTE: Following each plant species common name is the scientific name and Wildlife Food Index Value (FIV). FIVs are calculated and taken from Martin, A.C., et al, *American Wildlife & Plants - A Guide to Wildlife Food Habits*, Dover Publications, Inc. New York, 1951 and DeGraff, M. D., *Trees Shrubs and Vines for Attracting Birds*, Second Edition, Revised, University Press of New England, Lebanon, NH, 2002. An asterisk (*) following a FIV indicates winter food value. An (I) following a plant name indicates the plant is an invasive or non-native species. A (D) following a plant name indicates the species was dominant in the respective layer.



Photo 1. 25-50' buffer zone above CRL-29 & 30.
Note the trash and Oriental bittersweet.



Photo 2. Adjacent wetland below CRL-29 & 30.
Again note the trash.



Photo 3. 25-50' buffer zone above CRL-48 & 49. Note the Norway spruce, Oriental bittersweet, and multiflora rose.

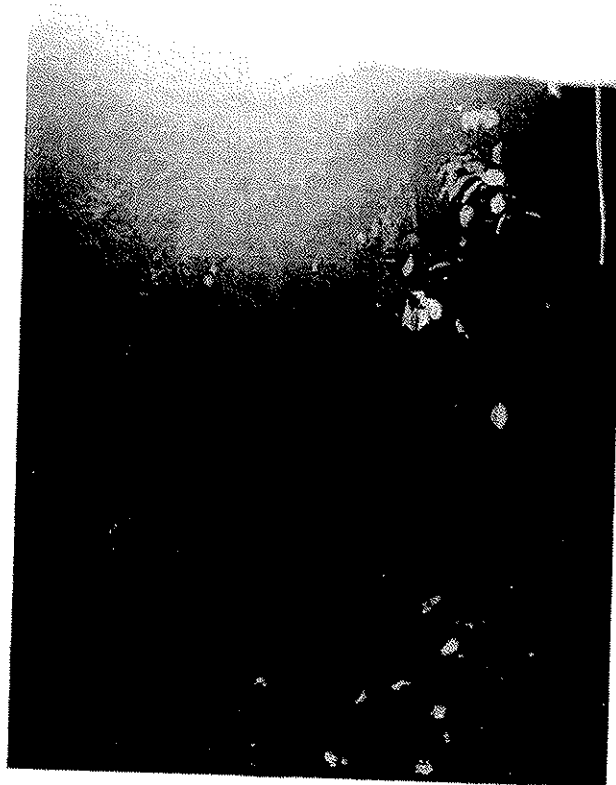


Photo 4. Adjacent wetland below CRL-48 & 49. Note the Oriental bittersweet.



Photo 5. 25-50' buffer zone above CRL-71 to 73



Photo 6. Adjacent wetland below CRL-71 to 73. Note the multiflora rose just upgradient of the wetland line and the Oriental bittersweet.



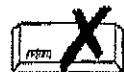
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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 1. Summary Sheet

Important:
When filling out
forms on the
computer, use
only the tab key
to move your
cursor - do not
use the return
key.



Carol Road at Brewster Drive, 2 New House Lots

Project Name

Needham, MA

Location

2,793 sq ft

Size of Area Being Impacted

11/14/08

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland	Total Area
1. Wetland below CRL-29 & 30		0		0
2. Buffer Zone above CRL-29 & 30			298 sq ft	298 sq ft
3. Wetland Below CRL-48 & 49		0		0
4. Buffer Zone above CRL-48 & 49			403 sq ft	403 sq ft
5. Wetland Below CRL-71 to CRL-73		0		0
6. Buffer Zone above CRL-71 to CRL-73			2,092 sq ft	2,092 sq ft
7.				

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See attached narrative report.

Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Jerome B. Carr
Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Jerome B. Carr, Ph.D.
Typed or Printed Name



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (for each wetland or non-wetland resource area)

I. General Information

Carol Road at Brewster Drive, 2 New House Lots

Project Location (from NOI page 1)

1. Wetland Below CRL-29 & 30

Impact Area (number/name)

9 & 10 October 2008

Date(s) of Site Visit(s) and Data Collection

Overcast, clearing skies, mid-60's

Weather Conditions During Site Visit (If snow cover, include depth)

Jerome Carr, PhD and Jamie Walker

14 October 2008

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

II. Site Description (complete A or B under Classification - see instructions for full description)

A. Classification

1. For Wetland Resource Areas, complete the following:

System: _____

Subsystem: _____

Class: _____

Subclass: _____

Hydrology/Water Regime

☐ Permanently flooded

☐ Intermittently exposed

☐ Semi-permanently flooded

☐ Seasonally flooded

☐ Saturated

☐ Temporarily flooded

☐ Intermittently flooded

☐ Artificially flooded

2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name _____

Vegetation Description _____

Physical Description _____



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover: 95 30 15 5 65
Trees (> 20') Shrubs (< 20') Woody vines Mosses Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Tree	red maple*		
Shrub	European buckthorn*		
Shrub	highbush blueberry*		
Shrub	common buckthorn		
Herb	kidney-leaved violet*		
Herb	European buckthorn		

C. Inventory (Soils)

Freetown Muck Very Poorly Drained
Soil Survey Unit Drainage Class
muck 0-14" topsoil
Texture (upper part) Depth
0"
Depth to Water Table

III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

0 0 0 0
6-12" dbh 12-18" dbh 18-24" dbh > 24" dbh

Number of Tree Cavities in trunks or limbs of:

0
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present

☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present

☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present

☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present

☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present

☒ Absent

Areas of ice-free open water in winter

☐ Present

☒ Absent

Mud flats

☐ Present

☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present

☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present

☒ Absent

Bank swallow colony

☐ Present

☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest[†]

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- Is the impact area part of an emergent marsh at least 1.0 acre in size? ☐ Yes ☒ No
- (marsh and waterbirds) 2.0 acres in size? ☐ Yes ☒ No
- 5.0 acres in size? ☐ Yes ☒ No
- 10.0 acres in size? ☐ Yes ☒ No

[†] 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

- | | | | |
|---|---------------------|------------------------------|--|
| Is the impact area part of a wetland complex at least | 2.5 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (turtles, frogs, waterfowl, mammals) | 5.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 25.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| For upland resource areas is the impact area part of contiguous forested habitat at least | | | |
| (forest interior nesting birds) | 50 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 100 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 250 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 500 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (grassland nesting birds) | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (special habitat such as gallery floodplain forest, alder thicket, etc.) | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways ☐ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted In Impact Area	Current (entire site)	Post-Construction (entire site)
Important Upland/ Wetland Food Plants	2 highbush blueberry		no change
Large Woody Debris on Ground	3 rotting fallen logs		no change



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (for each wetland or non-wetland resource area)

I. General Information

Carol Road at Brewster Drive, 2 New House Lots

Project Location (from NOI page 1)

2, 50-25' Buffer Zone above CRL-29 & 30

Impact Area (number/name)

9 & 10 October 2008

Date(s) of Site Visit(s) and Data Collection

Overcast, clearing skies, mid-60's

Weather Conditions During Site Visit (if snow cover, include depth)

Jerome Carr, PhD and Jamie Walker

14 October 2008

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

II. Site Description (complete A or B under Classification - see instructions for full description)

A. Classification

1. For Wetland Resource Areas, complete the following:

System: _____ Subsystem: _____

Class: _____ Subclass: _____

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name

Vegetation Description

Physical Description

DOES NOT APPLY



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover: 50 65 30 0 80
Trees (> 20') Shrubs (< 20') Woody vines Mosses Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Shrub	crab apple*		
Shrub	multiflora rose*		
Shrub	European buckthorn*		
Shrub	privet hedge*		
Herb	kidney-leaved violet*		
Woody Vine	Oriental bittersweet*		

C. Inventory (Soils)

Merrimac-Urban Land Complex (trashy fill)
Soil Survey Unit
fine sandy loam
Texture (upper part)
>80"
Depth to Water Table

Somewhat Excessively Drained
Drainage Class
0-19" topsoil
Depth

III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☐ Present ☒ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

0
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest¹

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- Is the impact area part of an emergent marsh at least 1.0 acre in size? ☐ Yes ☒ No
- (marsh and waterbirds) 2.0 acres in size? ☐ Yes ☒ No
- 5.0 acres in size? ☐ Yes ☒ No
- 10.0 acres in size? ☐ Yes ☒ No

¹ 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.
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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

- | | | | |
|---|---------------------|------------------------------|--|
| Is the impact area part of a wetland complex at least | 2.5 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (turtles, frogs, waterfowl, mammals) | 5.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 25.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| For upland resource areas is the impact area part of contiguous forested habitat at least | | | |
| (forest interior nesting birds) | 50 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 100 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 250 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 500 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (grassland nesting birds) | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (special habitat such as gallery floodplain forest, alder thicket, etc.) | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

B. Connectivity with adjoining natural habitats

- ☒ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☐ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of a sole* connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☒ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
[REDACTED]			
Large Woody Debris on Ground	1 rotting fallen log		no change



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (for each wetland or non-wetland resource area)

I. General Information

Carol Road at Brewster Drive, 2 New House Lots

Project Location (from NOI page 1)

3. Wetland Below CRL-48 & 49

Impact Area (number/name)

9 October 2008

Date(s) of Site Visit(s) and Data Collection

Overcast, clearing skies, mid-60's

Weather Conditions During Site Visit (If snow cover, include depth)

Jerome Carr, PhD and Jamie Walker

Person completing form per 310 CMR 10.60(1)(b)

14 October 2008

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

II. Site Description (complete A or B under Classification - see instructions for full description)

A. Classification

1. For Wetland Resource Areas, complete the following:

System: _____ Subsystem: _____

Class: _____ Subclass: _____

Hydrology/Water Regime

☐ Permanently flooded

☐ Intermittently exposed

☐ Semi-permanently flooded

☐ Seasonally flooded

☐ Saturated

☐ Temporarily flooded

☐ Intermittently flooded

☐ Artificially flooded

2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following. Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name _____

Vegetation Description _____

Physical Description _____



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover: 90 35 10 5 70
Trees (> 20') Shrubs (< 20') Woody vines Mosses Herbaceous
Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Tree	red maple*	Herb	jewelweed
Tree	yellow birch*	Herb	Canada goldrenrod
Shrub	highbush blueberry		
Shrub	multiflora rose*		
Shrub	arrowwood		
Herb	cinnamon fern		

C. Inventory (Soils)

Freetown muck	Very Poorly Drained
Soil Survey Unit	Drainage Class
muck	0-14" topsoil
Texture (upper part)	Depth
0"	
Depth to Water Table	

III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH:

0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

1

6-12" dbh

0

12-18" dbh

0

18-24" dbh

0

> 24" dbh

Number of Tree Cavities in trunks or limbs of:

1

6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0

12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0

>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant

☐ Present

☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☐ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter

☐ mink

☐ porcupine

☐ bear

☐ bobcat

☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present

☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians

☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles

☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present

☒ Absent



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest¹

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

IV. Landscape Context

A. Habitat Continuity (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- Is the impact area part of an emergent marsh at least 1.0 acre in size? ☐ Yes ☒ No
- (marsh and waterbirds) 2.0 acres in size? ☐ Yes ☒ No
- 5.0 acres in size? ☐ Yes ☒ No
- 10.0 acres in size? ☐ Yes ☒ No

¹ 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.
dehhab.doc • 10/07



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

- | | | | |
|---|---------------------|------------------------------|--|
| Is the impact area part of a wetland complex at least | 2.5 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (turtles, frogs, waterfowl, mammals) | 5.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 25.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| For upland resource areas is the impact area part of contiguous forested habitat at least | | | |
| (forest interior nesting birds) | 50 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 100 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 250 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 500 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (grassland nesting birds) | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (special habitat such as gallery floodplain forest, alder thicket, etc.) | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part* of a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☐ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
[REDACTED]			
Important Upland/ Wetland Food Plants	2 highbush blueberry		No change



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (for each wetland or non-wetland resource area)

I. General Information

Carol Road at Brewster Drive, 2 New House Lots

Project Location (from NOI page 1)

4. 50-25' Buffer Zone above CRL-48 & 49

Impact Area (number/name)

9 & 10 October 2008

Date(s) of Site Visit(s) and Data Collection

Overcast, clearing skies, mid-60's

Weather Conditions During Site Visit (if snow cover, include depth)

Jerome Carr PhD, and Jamie Walker

14 October 2008

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

II. Site Description (complete A or B under Classification - see instructions for full description)

A. Classification

1. For Wetland Resource Areas, complete the following:

System: _____

Subsystem: _____

Class: _____

Subclass: _____

Hydrology/Water Regime

☐ Permanently flooded

☐ Intermittently exposed

☐ Semi-permanently flooded

☐ Seasonally flooded

☐ Saturated

☐ Temporarily flooded

☐ Intermittently flooded

☐ Artificially flooded

2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name _____

Vegetation Description _____

Physical Description _____



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover: 40 90 40 0 60
Trees (> 20') Shrubs (< 20') Woody vines Mosses Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Tree	Norway spruce*	Herb	bristly dewberry*
Tree	red maple		
Shrub	crab apple*		
Shrub	multiflora rose*		
Woody Vine	Oriental bittersweet*		
Woody Vine	fox grape		

C. Inventory (Soils)

Merrimac-Urban Land Complex (trashy fill)
Soil Survey Unit
fine sandy loam
Texture (upper part)
>80"
Depth to Water Table

Somewhat Excessively Drained
Drainage Class
0-19" topsoil
Depth

III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>1</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

- ☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)
- ☐ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)
- ☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)
- ☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)
- ☐ Rock piles, crevices, or hollow logs suitable for:
- | | | | | | |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
| <input type="checkbox"/> otter | <input type="checkbox"/> mink | <input type="checkbox"/> porcupine | <input type="checkbox"/> bear | <input type="checkbox"/> bobcat | <input type="checkbox"/> turkey vulture |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
- ☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

- | | |
|--|---|
| <input type="checkbox"/> Breeding amphibians | <input type="checkbox"/> Non-breeding amphibians (foraging, re-hydration) |
| <input type="checkbox"/> Turtles | <input type="checkbox"/> Foraging waterfowl |

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present

☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present

☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present

☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present

☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present

☒ Absent

Areas of ice-free open water in winter

☐ Present

☒ Absent

Mud flats

☐ Present

☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present

☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present

☒ Absent

Bank swallow colony

☐ Present

☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest¹

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- Is the impact area part of an emergent marsh at least 1.0 acre in size? ☐ Yes ☒ No
- (marsh and waterbirds) 2.0 acres in size? ☐ Yes ☒ No
- 5.0 acres in size? ☐ Yes ☒ No
- 10.0 acres in size? ☐ Yes ☒ No

¹ 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

- | | | | |
|---|---------------------|------------------------------|--|
| Is the impact area part of a wetland complex at least | 2.5 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (turtles, frogs, waterfowl, mammals) | 5.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 25.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| For upland resource areas is the impact area part of contiguous forested habitat at least | | | |
| (forest interior nesting birds) | 50 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 100 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 250 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 500 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (grassland nesting birds) | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (special habitat such as gallery floodplain forest, alder thicket, etc.) | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

B. Connectivity with adjoining natural habitats

- ☒ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☐ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☒ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Important Upland/ Wetland food Plants	patch of fox grape		no change
Standing Dead Tree 6-12" dbh	1		no change
Tree Cavity 6-12" diameter	1		no change



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (for each wetland or non-wetland resource area)

I. General Information

Carol Road at Brewster Drive, 2 New House Lots

Project Location (from NOI page 1)

5. Wetland Below CRL-71 to 73

Impact Area (number/name)

9 & 10 October 2008

Date(s) of Site Visit(s) and Data Collection

Overcast, clearing skies, mid 60's

Weather Conditions During Site Visit (if snow cover, include depth)

Jerome Carr, PhD and Jamie Walker

14 October 2008

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

II. Site Description (complete A or B under Classification - see instructions for full description)

A. Classification

1. For Wetland Resource Areas, complete the following:

System: _____

Subsystem: _____

Class: _____

Subclass: _____

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA, July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name _____

Vegetation Description _____

Physical Description _____



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Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover: 40 50 30 0 95
Trees (> 20') Shrubs (< 20') Woody vines Mosses Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Tree	red maple*	Herb	Canada goldenrod
Shrub	European buckthorn*		
Shrub	arrowwood		
Woody Vine	Oriental Bittersweet*		
Herb	Sensitive Fern*		
Herb	Jewelweed		

C. Inventory (Soils)

Freetwon muck	Very Poorly Drained
Soil Survey Unit	Drainage Class
muck	0-14" topsoil
Texture (upper part)	Depth
0"	
Depth to Water Table	

III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☐ Present ☒ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

0 0 0 0
6-12" dbh 12-18" dbh 18-24" dbh > 24" dbh

Number of Tree Cavities in trunks or limbs of:

0
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☒ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☐ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest¹

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

IV. Landscape Context

A. Habitat Continuity (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- | | | | |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds) | 2.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 5.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

¹ 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.
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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

- | | | | |
|---|---------------------|------------------------------|--|
| Is the impact area part of a wetland complex at least | 2.5 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (turtles, frogs, waterfowl, mammals) | 5.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 25.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| For upland resource areas is the impact area part of contiguous forested habitat at least | | | |
| (forest interior nesting birds) | 50 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 100 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 250 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 500 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (grassland nesting birds) | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (special habitat such as gallery floodplain forest, alder thicket, etc.) | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☐ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Dense Herb Cover			no change



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (for each wetland or non-wetland resource area)

I. General Information

Carol Road at Brewster Drive, 2 New House Lots

Project Location (from NOI page 1)

6. 50-25' Buffer Zone Above CRL-71 to 73

Impact Area (number/name)

9 & 10 October 2008

Date(s) of Site Visit(s) and Data Collection

Overcast, clearing skies, mid-60's

Weather Conditions During Site Visit (If snow cover, include depth)

Jerome Carr, PhD, and Jamie Walker

14 October 2008

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

II. Site Description (complete A or B under Classification - see instructions for full description)

A. Classification

1. For Wetland Resource Areas, complete the following:

System: _____ Subsystem: _____

Class: _____ Subclass: _____

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108, August 1992. 491 pages.

Community Name _____

Vegetation Description _____

Physical Description _____



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover: 90 55 10 0 95
Trees (> 20') Shrubs (< 20') Woody vines Mosses Herbaceous
Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Tree	red maple*		
Tree	quaking aspen		
Shrub	European buckthorn*		
Shrub	multiflora rose*		
Herb	Sensitive fern*		
Woody Vine	Virginia creeper		

C. Inventory (Soils)

<u>Sudbury</u>	<u>Moderately Well Drained</u>
Soil Survey Unit	Drainage Class
<u>fine sandy loam</u>	<u>0-11" topsoil</u>
Texture (upper part)	Depth
<u>About 18-36"</u>	
Depth to Water Table	

III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☐ Present ☒ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

0
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☒ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



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Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest¹

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

IV. Landscape Context

A. Habitat Continuity (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- | | | | |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds) | 2.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 5.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

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Part 2. Field Data Form (continued)

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| | 250 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
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Part 2. Field Data Form (continued)

VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
dead trees 6-12" dbh			
Dense Herb Cover			no change
Large Woody Debris on Ground	2 fallen, rotting logs		no change